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No Date

DNAPL OCCURRENCE
BOISE TOWNE SQUARE MALL/WESTPARK SHOPPING CENTER
BOISE, IDAHO

Chronological Summary

- 3/88 Initial soil and groundwater contamination detected in westpark (target store) area by developers of Boise Towne Square mall. Source area is suspected to be a former bulk chemical distributor in the vicinity.
- 3/89 Responding to information provided by an informant, deq staff collects soil samples in the vicinity of the former Van Waters and Rogers above ground storage tank. Low levels of Perc were detected in one soil sample (62.0 ppb).
- 4/89 Special Resource Management (SRM) collects approximately 5 groundwater samples from private wells down gradient from the Mall/Westpark area. All results are below 1.0 ppb.
- 4/89 Remediation begins (pump and treat) at the Westpark area.
- 6/89 Van Waters and Rogers does soil investigation at the Pier 1 site and detects 17.0 ppm (17,000 ppb) of Perc in one of the soil samples.
- 7/90 Perc is detected above State/Federal MCL at Syringa Mobil Home Park. DEQ recommends that the water no longer be used for potable supply.
- 10/90 Several other private wells in the immediate area of the mobil home park are sampled with varying results.
- 4/91 Syringa Mobil Home Park water supply system disapproved by deq. Concentrations of Perc exceed 130.0 ppb.
- 5/91 Syringa Mobil Home Park residents vote to connect to Boise Water Corporation water supply. Connections funded by Van Waters and Rogers.
- 7/91 Four groundwater monitoring wells installed under DEQ contract in Towne Square Mall

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parking lot around the Pier 1 imports store.

7/91 DEQ staff collects and analyzes surface water samples from the south slough, down stream of Westpark's air stripper effluent discharge.

8/91 GZA Geoenvironmental, Inc. installs six additional groundwater monitoring wells in the Towne Square Mall parking lot.

10/91 Harding Lawson Associates (HLA) under contract with Van Waters and Rogers conducts "soil boring investigation" at Pier 1 imports and provides a report to DEQ in December, 1991.

10/91 HLA under contract with Van Waters and Rogers also conducts "soil Gas and Groundwater Investigation" at Pier 1 imports.

11/91 Van Waters and Rogers receives a "Permit To Construct" a vacuum extraction system (VES) to remove Perc from the soil at the Pier 1 Imports location.

1/92 Van Waters and Rogers enters into a "Consent Order" with DEQ to provide public drinking water to private well users downgradient of Towne Square Mall.

2/92 An "Index Well" is selected in the preliminary study area (PSA) to determine trends in Perc concentrations over time. Results:

<u>Date</u>	<u>Perc Conc. (ppb)</u>
10-1990	147
2-1992	130
3-1992	220
6-1992	180
8-1992	750
1-1993	180

10/92 Boise Towne Square Mall consent order finalized.

1/93 Groundwater and surface water sampling and analysis plan approved for Preliminary Study Area (PSA).

1/93 Mall soil and pilot boring sampling and analysis plan approved.

2/93 Psa surface water and groundwater sampling completed. Purpose was to determine boundaries of affected area.

3/93 Mall risk assessment workplan approved.

4/93

Mall pilot borings (2) completed. Purpose was to investigate hydrogeology at depth and install deep monitoring wells (>100 feet) in mall area immediately downgradient of spill area. Results (EPA method 8010, 8020):

<u>Well</u>	<u>Total depth (feet)</u>	<u>S.I. (feet)</u>	<u>Clay ?</u>	<u>Grab sample Results (ppb)</u>
mw-1	128	108-128	No	58' = 650 Perc 78' = 1 Perc
mw-2	137	117-137	No	58' = 2 Perc 98' = ND

Polluted water seeps toward West Boise well

Boise Water Corp. keeping watch as Perc-tainted groundwater inches closer to the drinking well.

By Andrew Garber
The Idaho Statesman

Groundwater contaminated with an industrial solvent is flowing toward a Boise Water Corp. drinking well in West Boise, officials said Friday.

Ben Hepler, Boise Water general manager, said the pollution doesn't present a problem now, but his company is keeping a close watch. Boise Water serves 50,000 customers.

The polluted water — contaminated with Perc — is about a quarter of a mile from the well and moving a few feet a day, officials said. At the current speed, it would take a year to reach the well, they said.

So far, the chemical apparently is confined to a shallow aquifer about 50 feet underground. The Boise Water well taps a deep aquifer 880-feet down.

But officials said there's a chance the pollution can move into the lower aquifer and reach the well, Boise Water's second largest water source.

Contamination is "possible if there is a connection" between the aquifers, said Ron Lane, a hydrogeologist with the state Division of Environmental Quality.

The Environmental Protection Agency considers Perc a long-term health threat. A person who drinks a half-gallon of water contaminated with 100 parts per billion of Perc daily stands a 1 in 10,000 risk of getting liver cancer, studies show.

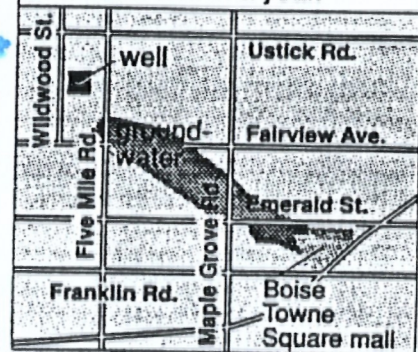
There are two ways the pollution could reach the lower aquifer, Lane said.

■ It could pour down old, unsealed drinking water wells that tap the deep aquifer. Lane said it's not known if such wells exist in the contamination's path.

■ The chemical could move downward if the two aquifers are naturally connected. The two aquifers are separated by layers of clay at the Boise Water well, but officials don't know how far

Contaminated groundwater

State officials say groundwater contaminated with solvent is flowing toward a Boise Water Corp. drinking well. It could reach the well in a year.



the clay extends.

The well, once it's turned on this summer, could make the situation worse by drawing contamination through any connections into the lower aquifer, Lane said.

More monitoring wells will be drilled to keep track of the pollution, he said, and steps may be taken to intercept and clean the polluted water before it goes much farther.

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Perc cleanup ordered months ago

But state just became aware of the fact that Perc was nearing drinking well.

By Andrew Garber
The Idaho Statesman

Although state officials only recently discovered that Perc was getting close to a Boise Water Corp. drinking well, they have been working for months to clean up the pollution.

The state Department of Health and Welfare last October ordered Van Waters and Rogers Inc. to clean up the pollution.

The company operated a chemical-distribution plant near the Boise Towne Square mall from 1973 to 1983.

The company operated a chemical-distribution plant near the Boise Towne Square mall from 1973 to 1983.

The groundwater was contaminated with Perc at that site. The company is trying to

clean up the chemical with an underground vacuum system, said Ron Lane, a hydrogeologist with the state Division of Environmental Quality.

A system of pipes has been buried in the parking lot at the mall and the chemical is sucked out of the dirt by a powerful vacuum, he said. So far, about 1,100 pounds of Perc has been removed.

Lane said it will take several years to clean up the soil and groundwater pollution to the point that it doesn't present a health threat.